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# NATURAL RESOURCES

Division of Environmental Quality

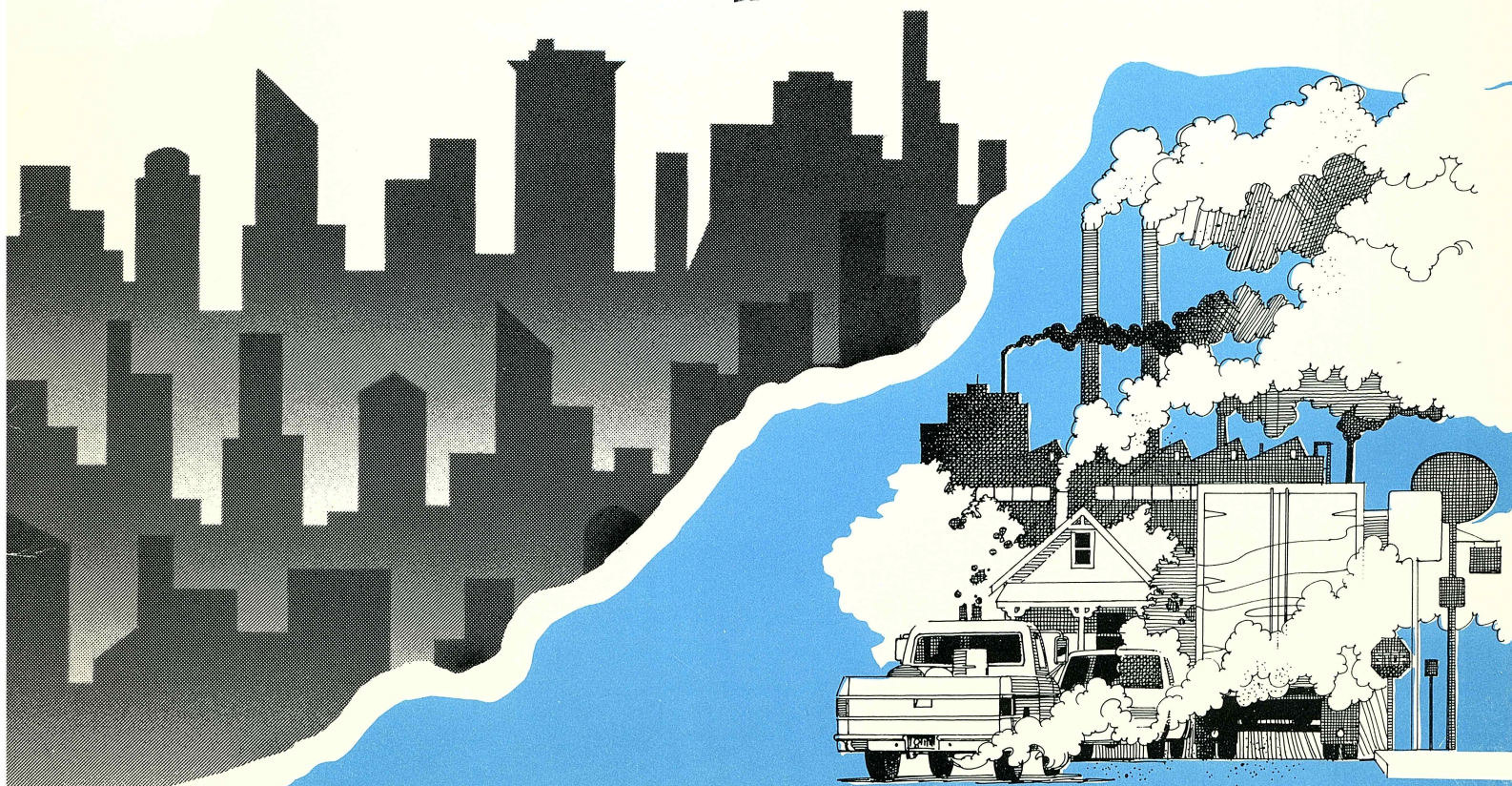
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## Air Pollution Control Program Report

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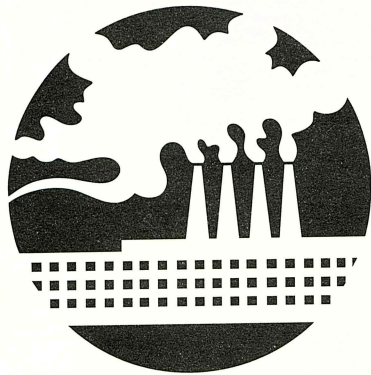
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## **Air Pollution Control Program Introduction**

The Air Pollution Control Program protects the health, general welfare and physical property of the people of Missouri from the ill effects of air pollution. The program does this through the prevention, removal and control of air pollution by all practical and economic means. The main goal of this program is to ensure that national ambient (outdoor) air quality standards are met and maintained in Missouri for several major air pollutants. These pollutants are lead, carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide and particulates. In addition to these National Outdoor Air Quality Standards pollutants, asbestos and other airborne toxic pollutants are also controlled by the Air Pollution Control Program. In order to accomplish this goal, the program is divided into the Technical Support, Enforcement, Construction Permit, Planning, and Administration sections. These sections act together to develop and enforce Missouri state rules established by the actions of the Missouri Air Conservation Commission and Missouri Law 643. This report is a summary of the 1990 actions of the Air Pollution Control Program.



## **TECHNICAL SUPPORT SECTION**

One of the most important duties of the Technical Support Section of the Air Pollution Control Program is assuring the state's ambient (outdoor) air quality through the collection and use of air pollutant data. Another duty of the section is to compile and maintain an up-to-date statewide list of air pollutant emissions. Other duties include doing computer estimates of the impact of pollutant emissions from stationary sources such as industries, providing technical information and assistance to the public and gathering information for other pollution control agencies. The following information looks at the air quality trends in Missouri.

## **Major Air Pollutants**

Outdoor air quality is judged by comparing area air pollutant amounts with the National Ambient (Outdoor) Air Quality Standards that have been set by the U.S. Environmental Protection Agency. These standards (listed in Table 1) set outdoor limits for six major air pollutants that may have a negative effect on public health and welfare. These six pollutants are ozone (O<sub>3</sub>), small particulates of less than 10 microns in size (PM<sub>10</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) and lead (Pb).



## National Ambient (Outdoor) Air Quality Standards

**Table 1.**

Pollutant	Averaging Time	Primary Standard	Secondary Standard
Ozone	*1-hour average	235 ug/m <sup>3</sup> ** (0.12 ppm)	(Same as primary)
Particulate Matter<10 Micron	Annual arithmetic mean	50 ug/m <sup>3</sup>	(Same as Primary)
	*24-hour average	150 ug/m <sup>3</sup>	
Carbon Monoxide	*1-hour maximum	40 mg/m <sup>3</sup> (35 ppm)	(Same as primary)
	*8-hour maximum	10 mg/m <sup>3</sup> (9 ppm)	
Sulfur Dioxide	*24-hour maximum	365 ug/m <sup>3</sup> (0.03 ppm)	1300 ug/m <sup>3</sup> (0.5) ppm
	Annual arithmetic mean	80 ug/m <sup>3</sup> (0.14 ppm)	
	*3-hour maximum		
Nitrogen Dioxide	Annual arithmetic mean	100 ug/m <sup>3</sup> (0.05 ppm)	(Same as primary)
Lead	Calendar quarter (3 month) arithmetic mean	1.5 ug/m <sup>3</sup>	(Same as primary)

\*Not to be exceeded more than once per year for secondary and primary standard.  
 \*\*ug/m<sup>3</sup>=micrograms per cubic meter

The National Ambient Air Quality Standards contain both a primary and secondary standard for each regulated air pollutant. The first standards are to protect public health. The second standards are to protect the public as defined by the possible air pollution effects on plants, goods and clear vision.

### Air Quality Monitoring

The measurement of Missouri air quality is obtained from the study of outdoor air samples. These samples are collected by measuring devices located throughout the state.

Table 2 lists the pollutants and their health effects.

**Table 2.**

<b>Ozone:</b>	A bluish, explosive gas which has a pleasant odor when the concentration is less than two parts per million (ppm).
<b>Health Effects:</b>	Coughing, chest discomfort, respiratory tract and eye irritation, and decreased pulmonary functions.
<b>Inhalable Particulate:</b>	A broad class of chemically and physically diverse substances that exist as discrete particles with aerodynamic diameter less than or equal to 10 micrometers.
<b>Health Effects:</b>	Increases the prevalence of chronic and acute respiratory illnesses.
<b>Carbon Monoxide:</b>	A poisonous gas that is odorless, colorless and tasteless.
<b>Health Effects:</b>	Headache, mental dullness, dizziness, weakness, nausea, vomiting, loss of muscular control, increased then decreased pulse and respiratory rates, collapse or unconsciousness.
<b>Sulfur Dioxide:</b>	A colorless gas with a strong suffocating odor.
<b>Health Effects:</b>	Throat and lung irritation, swelling and accumulation of fluid in the throat and lungs, and nasal bleeding.
<b>Nitrogen Dioxide:</b>	A poisonous reddish-brown to dark brown gas with an irritating odor.
<b>Health Effects:</b>	Nose and throat irritation, coughing, choking, headache, nausea, stomach or chest pains, and lung inflammation such as bronchitis or pneumonia.
<b>Lead:</b>	A bluish-white to silvery-gray solid.
<b>Health Effects:</b>	Decreased physical fitness, fatigue, sleep disturbance, headache, aching bones and muscles, constipation, abdominal pains and decreased appetite. At high levels of exposure, it can also result in permanent nervous system damage, seizures, coma and death.



In 1990, the Missouri Air Pollution Monitoring Network had 120 monitors. The three kinds of monitors are National Air Monitoring Stations (NAMS), State and Local Air Monitoring Stations (SLAMS), and Special Purpose Monitors (SPM). NAMS provides data on national air quality trends; other permanent monitors are listed as SLAMS. SPM sites are placed for a limited time to study air quality in small areas or near special sites.

If the information in an area reveals that an air quality standard for a pollutant has been exceeded, the area may be listed by the Missouri Air Conservation Commission and U.S. Environmental Protection Agency as a nonattainment area for that pollutant. The decision to make an area nonattainment is based on a thorough review of past air quality data and knowledge of the pollution sources that may contribute to exceeding the standard. For an area to be removed from the list of nonattainment areas, monitors must show no pollutant concentrations above the standard for a period of at least two years.

TABLE 3.

## Air Monitors in Network during 1990

	State	Kansas City	St. Louis County	St. Louis City	Springfield	Total
Ozone	5	3	5	4	2	19
Particulate (PM10)	10	5	3	4	3	25
Carbon Monoxide	1	3	5	2	1	12
Sulfur Dioxide	6	3	5	3	2	19
Nitrogen Dioxide	2	2	5	2	1	12
Lead	4	2	2	1	0	9
Wind Direction	7	1	4	0	0	12
Wind Speed	7	1	4	0	0	12
Total	42	20	33	16	9	120

## Missouri Air Quality

During 1990, most areas of Missouri had levels of air quality that were well within the standards. There were no excess emissions of the standards for sulfur dioxide, nitrogen dioxide, carbon monoxide and particulates of less than 10 microns. Excess emissions were recorded for lead and ozone. The downtown areas of Kansas City and St. Louis are still listed as ozone nonattainment areas and the inner portion of the City of St. Louis remains listed as a carbon monoxide nonattainment area. The air quality trends shown by the following graphs indicate that average outdoor emissions have been decreasing for all of the major pollutants except lead. These trends are one important measurement showing an

improvement in Missouri's air quality, but they do not show all of the information used for defining the quality of outdoor air.

## Ozone

Ozone is formed when outdoor nitrogen oxides react with vapors from volatile organic compounds (VOC) such as gasoline, solvents, auto exhaust, etc. This reaction is said to be photochemical because it requires the radiant energy of sunlight. The level of ozone in the air depends on the outdoor levels of these gases, the radiant energy of the sun and other weather conditions. In Missouri, April through October is the season of highest ozone levels. Ozone may produce ill health effects and plays a major part in the creation of smog.



Figure 1.

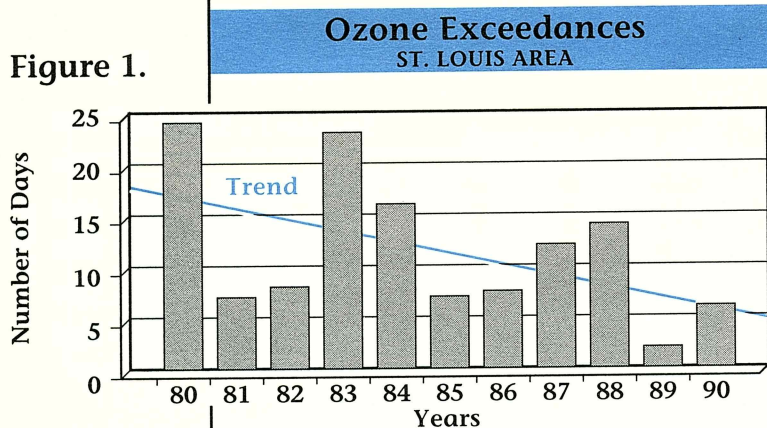


Figure 2.

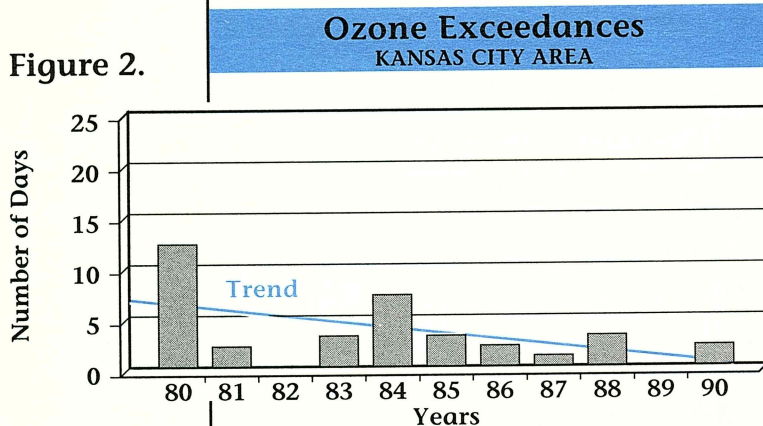


Figure 3.

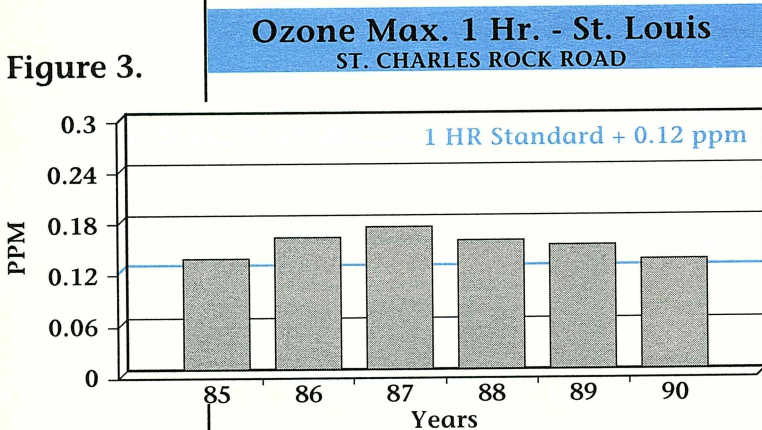
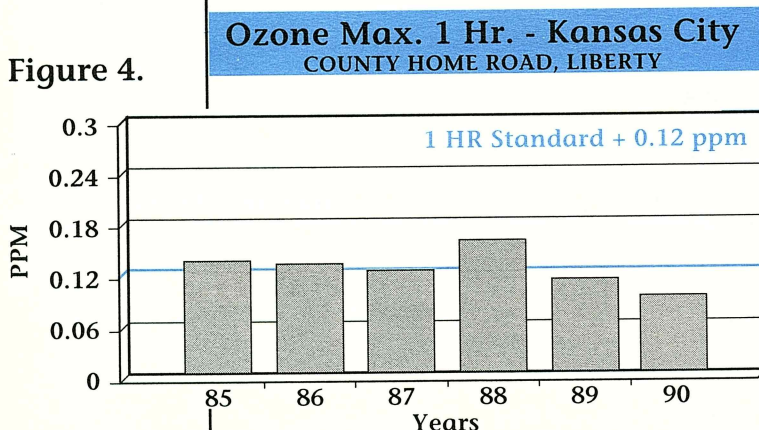


Figure 4.



## Ozone Levels in Downtown Areas of Kansas City and St. Louis

The levels of ozone in the downtown areas of Kansas City and St. Louis are similar to other high ozone levels seen in most large cities. Figure 1 and Figure 2 show the problem levels of ozone in Kansas City and St. Louis from 1980-1990. During 1990, the ozone standard was exceeded six times in the St. Louis area and only twice in the Kansas City area.

Figure 3 and Figure 4 show the maximum recorded one-hour average ozone levels during 1985-1990 for two sites, the St. Charles Rock Road site in the St. Louis area and the County Home (Liberty) site in the Kansas City area. The one-hour averages show a decreasing level of ozone at these sites.

The decreasing levels of ozone in the St. Louis and Kansas City areas can be partly attributed to VOC emission control strategies that have been implemented and enforced by the state and the metropolitan air pollution control agencies.

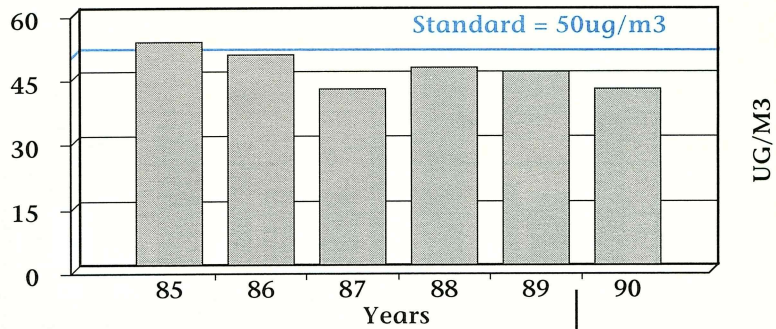


## Suspended Particulates

Suspended particulate matter includes all the solid and liquid material floating in the atmosphere. This includes dust, pollen, soot, fly ash, etc. The federal ambient air quality standards apply only to PM<sub>10</sub> (particulate matter smaller than 10 micrometers in diameter). The sources of PM<sub>10</sub> emissions are industrial and agricultural operations, automobile exhaust and numerous other activities. The seasonal and year-to-year variations in the level of PM<sub>10</sub> may be mostly attributed to changes in wind and rainfall conditions. Figure 5 and Figure 6 show the PM<sub>10</sub> concentrations recorded during 1985-1990 at the St. Joseph South Highway 759 monitor site. This site has recorded some of the highest PM<sub>10</sub> values in the state during recent years. The graphs indicate a decreasing concentration trend at this site, with most of the recent values below the standards.

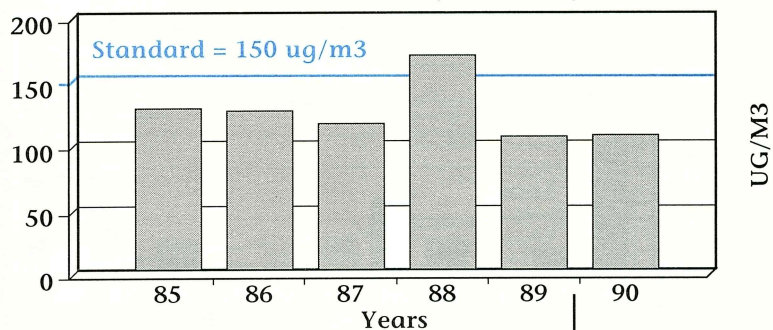
**PM<sub>10</sub> Annual Weighted Averages**  
ST. JOSEPH, SOUTH 759 HWY SITE

Figure 5.



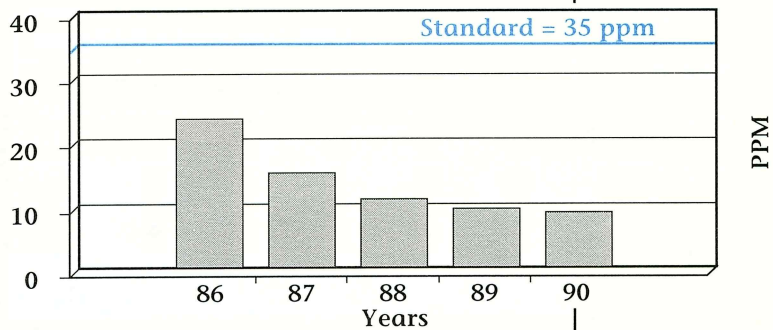
**PM<sub>10</sub> 2nd Highest 24 Hr. Value**  
ST. JOSEPH, SOUTH 759 HWY SITE

Figure 6.



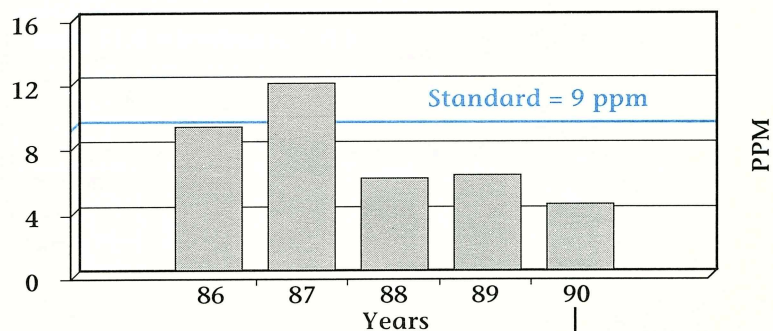
**Carbon Monoxide 1 Hr. Maximum**  
ST. LOUIS CITY, 10th & WASHINGTON SITE

Figure 7.



**Carbon Monoxide 8 Hr. Maximum**  
ST. LOUIS CITY, 10th & WASHINGTON SITE

Figure 8.



## Carbon Monoxide

Carbon monoxide (CO) is formed by the incomplete combustion of carbon-containing fuel or substances. It is one of the most pervasive air pollutants. However, this deadly gas does not remain in the atmosphere due to its rapid transformation into carbon dioxide. More than 75 percent of the CO emitted to the atmosphere is from trucks and automobiles, with the highest concentrations of CO emissions caused by traffic congestion in metropolitan areas. Figure 7 and Figure 8 show the 1985-1990 maximums of the one-hour and eight-hour averages for the St. Louis 10th and Washington monitor site. The graphs indicate a decreasing CO trend at this site. CO levels at this St. Louis location are representative of other metropolitan areas in the United States.



Figure 9.

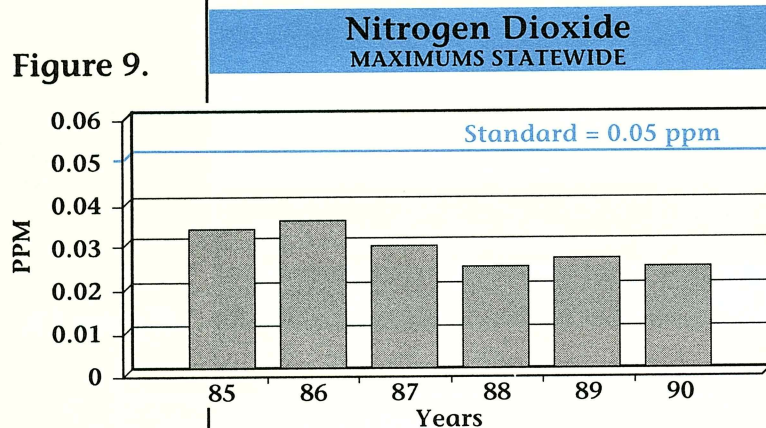


Figure 10.

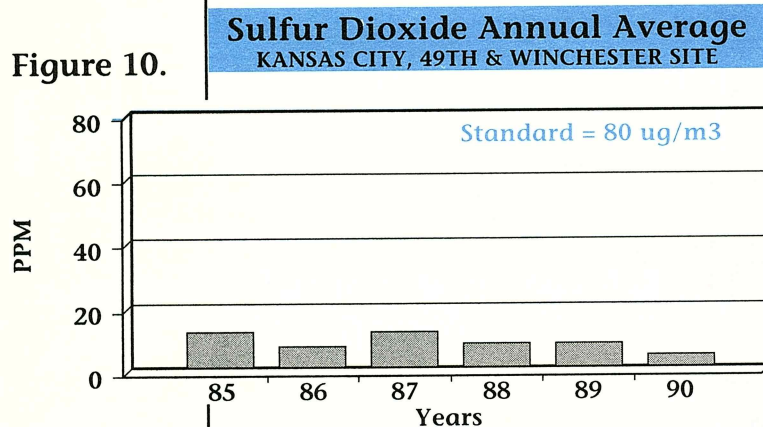


Figure 11.

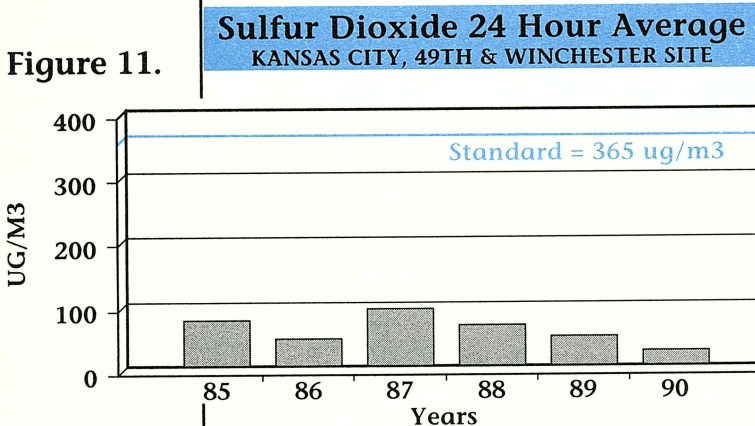
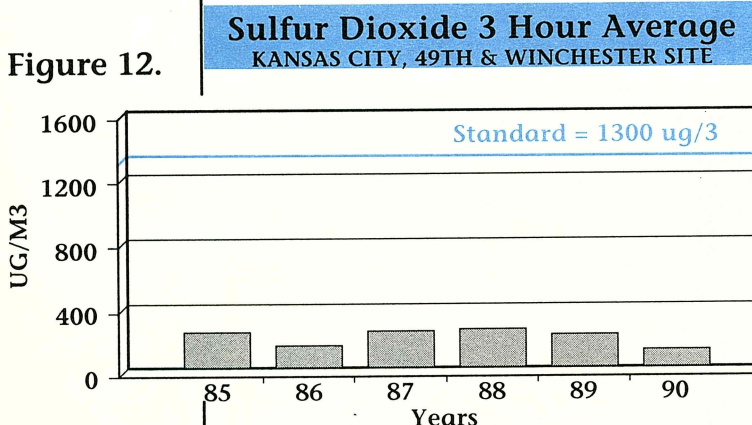


Figure 12.



## Nitrogen Dioxide

Almost all nitrogen dioxide in the air is from man-made sources, with the major source being high temperature burning. When fuels are burned above 1200 degrees Fahrenheit, some of the nitrogen in air forms highly reactive nitrogen oxide gases. Nitrogen dioxide is the major component of the gases produced. Principal sources of nitrogen dioxide emissions are power plants, industrial boilers and vehicle traffic emissions. Figure 9 shows the maximum annual average nitrogen dioxide levels for all monitor sites in the state during 1985-1990. The graph shows Missouri levels of nitrogen dioxide which are usually below the standard. Occasionally, emissions exceeding the standard have been recorded by a few sites that are located near major sources of nitrogen dioxide.

## Sulfur Dioxide

Sulfur oxides are gases produced from the burning of sulfur-containing fuels such as coal and oil, the smelting of metals and other industrial processes. Sulfur dioxide (SO<sub>2</sub>) comprises about 95 percent of these gases.

Figures 10, 11 and 12 represent the annual, the 24-hour and the 3-hour averages for SO<sub>2</sub> during 1985-1990 for the Kansas City 49th and Winchester site. These graphs indicate that the levels of SO<sub>2</sub> are well below the standards for all three averaging methods. They also indicate a slightly decreasing trend in SO<sub>2</sub> levels at this site during the last four years. This particular site is typical of other SO<sub>2</sub> monitoring sites in the state. Short-term exceedances of the SO<sub>2</sub> standards are occasionally recorded by monitors that are located near major sources of SO<sub>2</sub> emissions.



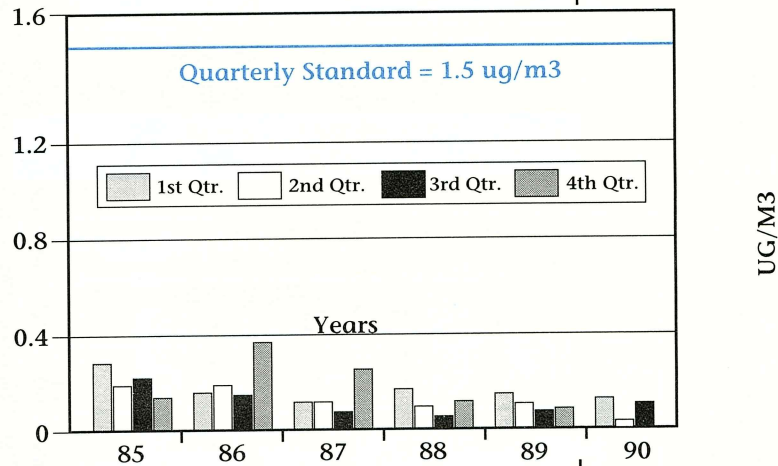
## Lead

In Missouri, the major sources of airborne lead and its compounds are motor vehicle exhausts (from use of leaded gasoline) and industrial lead smelting. Studies have shown that children, from birth to six years of age, have the most problems with the ill health effects of lead. Therefore, the air quality standards have been set primarily to protect the health of young children. Federal studies have shown that in 1985 nearly 73 percent of airborne lead was from motor vehicle exhausts. This value dropped to 34 percent in 1988. The major decrease in vehicle lead emissions is due to the federal controls on leaded gasoline. Figure 13 shows the annual quarterly average lead levels for the St. Louis County South Lindberg monitor site for 1985-1990. Lead levels here are similar to other downtown areas with heavy traffic. Several areas in Missouri near industrial lead smelters have outside air lead levels above the air quality standard. Two such areas are in Iron County and Jefferson County. Figure 14 shows the 1985-1990 quarterly lead values for the Jefferson County Dunklin site in Herculaneum, located one-half mile from a lead smelter. Presently, this smelter is making improvements to reduce lead emissions and bring the lead smelter area into compliance with the lead standard.

In Iron County, a lead smelter that was voluntarily shut down in 1986 was above the lead standard prior to being shut down. At this time, a state plan is being developed by Air Pollution Control Program and the smelter to reduce the airborne lead emissions to permit the area to comply with the standard in the event the smelters reopens.

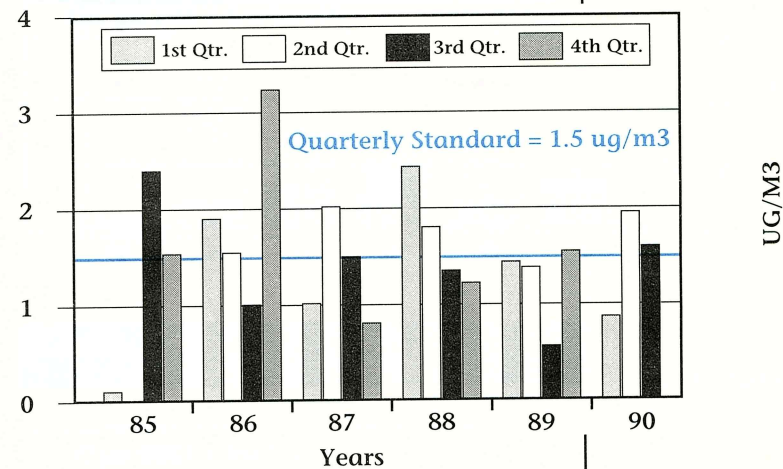
**St. Louis County Lead Levels**  
QUARTERLY AVERAGES, SOUTH LINDBERG SITE

Figure 13.



**Jefferson County Lead Levels**  
QUARTERLY AVERAGES, DUNKLIN SITE

Figure 14.





# Hazardous and Toxic Air Pollutants

## Hazardous Air Pollutants

The National Emissions Standards for Hazardous Air Pollutants are federal limits on the emissions of six hazardous pollutants not included in the original list of major pollutants discussed earlier in this report. The pollutants are arsenic, asbestos, benzene, beryllium, mercury and vinyl chloride. Missouri has adopted the federal standards for the regulation of these hazardous air pollutants.

## Toxic Chemical Air Pollutants

Presently, Missouri is one of eight states without laws to regulate the release of hundreds of toxic chemicals into the air. During recent years, the Missouri General Assembly has considered legislation to give the Department of Natural Resources control over toxic chemicals; the legislation has not yet been passed. Such a law to set stricter

contains specific types and amounts of toxic releases that have been reported by industrial and school or hospital sources. Although the toxic release study does not provide data on toxic emissions from moving sources and very small sources, it is currently the best information for Missouri to estimate the release of toxic chemicals into the air.

Under the new 1990 amendments to the Clean Air Act, the Environmental Protection Agency will propose more air quality standards to control the emissions of 189 toxic chemicals into the air. In Missouri, approximately 136 of these toxic chemicals are emitted to the outside air. Emissions of one or more of these chemicals occur in almost two-thirds of the counties in Missouri. Figure 15 shows which Missouri counties had the highest air emissions of toxic chemicals in 1988. In the graph, the St. Louis area includes both the St. Louis County and the City of St. Louis. Table 4 lists the toxic chemicals with the highest amounts of emissions in Missouri. The data presented in Figure 15 and Table 4 are from the 1988 Toxic Release Inventory of emitters. Presently, the Missouri Air Pollution Control Program is defining and finding the acceptable ambient (outdoor) levels for a number of toxic chemicals. These values are recommended to limit the outdoor air amounts of these chemicals in order to protect public health and property.

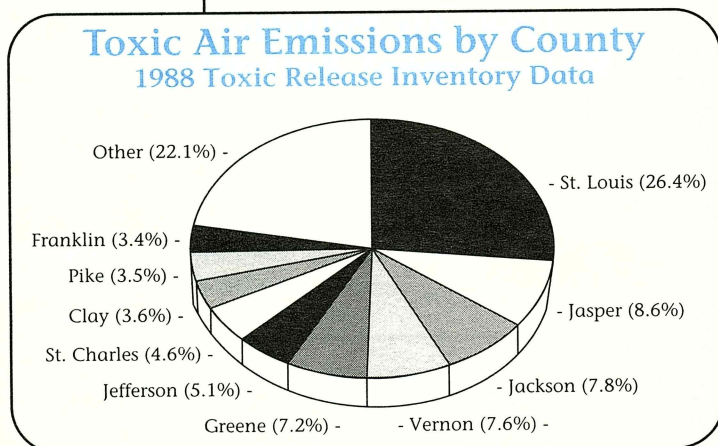


Figure 15.

standards would start the process to regulate toxic air emissions in Missouri. Most of the existing data on toxic chemical emissions are in the U.S. Environmental Protection Agency's Toxic Release Inventory. The inventory

Table 4.

Chemical Name	Toxic Air Emissions Lbs./Yr.	% of Total Toxic Air Emissions
Xylene (Mixed Isomers)	9,716,980	19.39
Toluene	5,489,302	10.95
Methanol	3,229,473	6.44
Methyl Ethyl Ketone	2,874,739	5.74
Dichloromethane	2,867,201	5.72
Trichloroethane (1,1,1-)	2,849,136	5.69
Glycol Ethers	2,752,457	5.49
Nitric Acid	2,621,967	5.23
Acetone	2,254,242	4.50
Ammonia	2,216,540	4.42
n-Butyl Alcohol	2,088,392	4.17
Trichloroethylene	1,717,568	3.43
Aluminum Oxide	1,347,498	2.69
Freon 113	1,327,522	2.65
Methyl Isobutyl Ketone	966,080	1.93
Other Toxic Chemicals	5,796,951	11.57
Total Toxic Air Emissions	50,116,048	



## Toxic Emissions Studies

The Air Pollution Control Program, the U.S. Environmental Protection Agency and the local air pollution control agencies have begun a study of air toxic issues. The work includes a study of urban air toxics in St. Louis, a study of two high-risk sources in Kansas City and a study of toxic emissions from charcoal kilns in southern Missouri. The urban air toxics study will find and list emissions of toxic air pollutants in the St. Louis area. The study results will be used to develop methods to reduce toxic emissions and improve air quality. The high-risk source study will examine the emissions of dichloromethane from two

major companies in Kansas City. The study will use techniques to estimate the degree of public exposure to this chemical and subsequently will also develop ways to reduce the amount of dichloromethane emitted into the air. The charcoal kiln study will measure the 10 micron particulate emissions and specific toxic chemicals from a "Missouri type" kiln. The goal of the study is to identify any ill health effects from long-term exposure to emission from charcoal kilns. The project may also show whether other control measures are required for this type of Missouri kilns.

## ENFORCEMENT SECTION

### Procedures

The enforcement process of the Air Pollution Control Program may follow several different paths. When a source is found to violate an air quality standard and is issued a notice of violation (NOV), the Enforcement Section reviews the case and determines appropriate action. The staff first attempts to correct a problem through discussions with the source in an effort to reach the most desirable option, which is obtaining agreements for voluntary compliance. Another method, usually reserved for recurring problems, is the abatement order. This order from the Director of the Division of Environmental Quality requires the violator to develop a specific option plan and time schedule to correct the violation. When the Enforcement Section decides a violation is serious, such as a permit, asbestos, abatement order or serious emission violation, the staff asks the Missouri Air Conservation Commission for authority to take further action. With commission approval, the Air Pollution Control Program staff attempts to work out a consent order or

Settlement Agreement with the company. This agreement will include the payment of a penalty for damages and a work schedule to correct the problem. If the Enforcement Section cannot work out an agreement, the case will be referred to the Attorney General's Office for legal action.

### 1990 Air Pollution Enforcement Activities

Inspections	586	
NOV's	328	
Settlements	41	Approximate Amount \$112,800
Consent Orders	6	



## Stage II Vapor Recovery

In 1988, the Stage II vapor recovery program was started in St. Louis City and St. Louis, St. Charles, Jefferson and Franklin counties. Special nozzles on gasoline pumps now capture hydrocarbon emissions that previously were vented to the outdoor air. The Stage II Vapor Recovery controls have helped to improve air quality in St. Louis area. In cooperation with St. Louis city and county air pollution control agencies, the Missouri State Air Pollution Control Program inspects gasoline stations and other fuel sales outlets for excess gasoline emissions and the proper maintenance of the vapor recovery equipment. Gasoline is a volatile organic compound that emits hydrocarbons, an ingredient in the formation of the pollutant ozone. Gasoline also releases benzene and other toxic compounds into the air. The special gasoline nozzles reduce the escape of these emissions to the air by 95 percent and contribute to cleaner air in the St. Louis metropolitan area.

Total Number of Facilities Inspected	2,966
Total Number of Nozzles/Hoses Inspected	35,268
Total Number of Defective Nozzles/Hoses Found	4,292
Total Number of Citations for Pumping while Nozzles/Hoses were "Tagged Out of Service"	23
Approximate Amount of Settlements for above Citations	\$25,000

## Regional Office Enforcement

The Department of Natural Resources has six regional offices located across the state. The air pollution staffs at these offices inspect sources of air emissions for compliance with air quality laws and rules. When an inspector finds a problem, the case is sent to the Air Pollution Control Program in Jefferson City for proper action. The field work performed by the regional offices and their suggestions help the central office determine proper enforcement actions and penalties. The regional office staffs also respond to special requests such as checking on sites and companies that have requested an air pollution permit and the gathering of evidence for civil lawsuits against air polluters when needed.

## Asbestos

Asbestos is a material that was once widely used for its insulating and fireproofing properties. With age, asbestos breaks down and causes health hazards for people breathing the airborne fibers. Several federal laws now require its safe removal from many buildings. The Air Pollution Control Program monitors these removal activities. In 1990, Missouri received notification of 1,206 jobs and inspected 886 of the projects to ensure proper removal of asbestos.



## CONSTRUCTION PERMITS SECTION

The Air Pollution Control Program works under the Missouri Air Conservation Law, Chapter 643, RSMo; under this law, the Air Conservation Commission has defined which emission sources require permits before construction of an air pollution source and how pollutants must be controlled. With few exceptions, when a company plans to build or expand an air pollution source, the company must first apply for a permit with the Air Pollution Control Program. The state laws and rules are strict enough in Missouri for the United States Environmental Protection Agency to allow Missouri to enforce parts of the federal Clean Air Act in the state. This includes writing permits for major sources under the federal Prevention of Significant Deterioration (PSD) rules and enforcement authority for the federal New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants (NESHAPS).

The Air Conservation Law was changed in 1986 to restrict the length of time the Air Pollution Control Program has to approve or deny a permit and allow for the collection of permit processing fees. Figure 1 shows the amount of fees collected during 1990. At the time the change was made, the Program had a backlog of permits needing review. Additional effort eliminated the backlog in 1990 as the Air Pollution Control Program issued 48 percent more permits than were issued in 1986 and 290 percent more permits than were issued in 1983. Most permits are for smaller air pollution emitters, but they are important because each adds to the total air pollution problem. Sources such as this are called synthetic de minimis or synthetic minor sources (synthetic is abbreviated "syn" in the figures).

The Air Pollution Control Program averages 50 to 60 days to complete a permit application. The quality and thoroughness of the submitted application are the major factors in the length of review time. Review of an application to construct a major emission source may take up to six months to complete. The emission control requirements for major sources are often much more stringent than for smaller sources. Best Available Control Technology (BACT) is required for new or modified major sources in most areas. New or modified major sources in certain areas (NAA in the figures) with the greatest air pollution problems require an even more stringent level of control called Lowest Achievable Emission Rate (LAER), and they must balance their new emissions by lowering existing emissions in the area by an equal amount. These permits often require the company to submit measurements, a public comment period and a public hearing in the area of the new source. The figures that follow present the numbers and types of permits issued in 1990.

The Missouri Air Conservation Law allows any city or town to run its own air pollution control agency if its ordinances and laws are as strict as those of the state. It must also have the resources to carry out a complete permit and enforcement program. St. Louis City, St. Louis County, Springfield, and Kansas City have been given permission from the state to operate permit and enforcement programs in their areas. The air pollution control agencies in these areas are audited by the state to see that they comply with the rules.



The following table is a partial list of the types and numbers of industries to which permits were issued in 1990. It is a partial list because not all sources reported have identified the Standard Industrial Classification number that is applicable to the industry. About 100 of the sources are listed here out of the 145 sources getting permits. The permits issued by the local agencies are not reported here.

**Table I**

### Industrial Classification

Agriculture Service.....	1
Measuring, Analyzing & Controlling Instruments.....	1
Printing, Publishing and Allied Industries.....	1
Rubber and Miscellaneous Plastic Products.....	1
Wholesale Trade-Nondurable Goods.....	1
National Security and International Affairs.....	2
Furniture and Fixtures.....	3
Industrial & Commercial Machinery & Computer.....	3
Primary Metal Industries.....	3
Electric, Gas and Sanitary Services.....	4
Health Services.....	6
Mining and Quarrying of Nonmetallic Minerals.....	6
Fabricated Metal Products (Except Machinery & Tran.).....	7
Transportation Equipment.....	7
Electronic and Other Electrical Equipment.....	9
Food and Kindred Products.....	9
Chemical and Allied Products.....	11
Petroleum Refining and Related Industries.....	11
Stone, Clay, Glass and Concrete Products.....	11

Construction Permits were issued in 53 counties with the first 12 comprising nearly 60 percent of the total. The following is a list of the 12 counties and the number of permits issued in each:

Cape Girardeau.....	4
Dunklin.....	4
Howell.....	4
Jefferson.....	4
Morgan.....	4
Camden.....	5
Lawrence.....	5
Clay.....	7
Boone.....	
Buchanan.....	8
Jackson.....	11
Jasper.....	11

The Construction Permit Section also checks permit requests for portable sources changing location, emission banking tradeoff requests and sales tax exemption requests for the purchase of emission control equipment. Sales tax exemptions were granted in 1990 for nearly \$50 million in air pollution control equipment costs to Missouri industries, for a total exemption of more than \$3 million dollars in taxes.



## **PLANNING SECTION**

The Planning Section has several functions. The first is to develop new rules and amend or rescind the rules of the Missouri Air Conservation Commission. The second is to work with the Missouri Secretary of State, private industry, Environmental Protection Agency and other agencies concerning rules on air pollution controls. The section also develops State Implementation Plans (SIP's) that explain how areas of the state that violate ambient air quality standards will be brought into compliance. The sections third main function is to estimate emissions from vehicles and oversee the motor vehicle inspection/maintenance program in St. Louis City and St. Louis, St. Charles and Jefferson counties.

## **Tank Truck Leak Testing**

In 1990, the Air Pollution Control Program started a program that requires the annual testing of gasoline tank trucks for leads. This program is for the St. Louis and Kansas City ozone nonattainment areas and will reduce volatile organic compound emissions from gasoline tank trucks. The states of Kansas and Illinois also have gasoline tank truck leak testing programs, and with the full implementation of the Missouri program in 1991, volatile organic compound emissions will be further reduced in the St. Louis and Kansas City areas.

## **Incinerator Regulations**

During 1990, the Air Conservation Commission approved new, more stringent regulations for the control of emissions from incinerators. The new requirements restrict emissions and dictate proper operating procedures for sewage sludge, industrial waste, solid waste and medical waste incinerators.

## **Asbestos**

The Air Pollution Control Program currently is working on proposals to update requirements for projects. In response to a new state law giving the Department of Natural Resources added responsibilities concerning asbestos, the Air Pollution Control Program proposed requirements for everyone involved in performing asbestos removal projects, inspections and training. The Air Pollution Control Program also proposed major work practice standards and a violation point system designed to ensure compliance with the new rule. This proposed rule was presented for public hearing in September 1990. The comments received raised a number of issues that the Air Pollution Control Program is now attempting to resolve through the appointment of a committee of people from the various groups that would be affected by the rule. The committee is now close to completing its work, and a revised version of the rule will be completed soon.



## Inspection/ Maintenance

### Air Pollution Control Program Rulemaking Year 1990

1990	Final Rule	Actions
March	10-2.260	Control of Petroleum Liquid Storage, Loading and Transfer (Kansas City)
	10-5.220	Control of Petroleum Liquid Storage, Loading and Transfer (St. Louis)
April	10-6.060	Permits Required
June	10-6.170	Restriction of Emission of Particulate Matter to the Ambient Air Beyond the Premises of Origin
	10-6.150	Circumvention
October	10-6.180	Measurement of Emissions of Air Contaminants
	10-6.080	Emission Standards for Hazardous Air Pollutants
November	10-6.190	Sewage Sludge and Industrial Process Incinerators
	10-6.210	Restriction of Emissions of Lead from Primary Lead Smelter Refinery Installation

During 1990, the Air Pollution Control Program, in cooperation with the State Highway Patrol, started a computerized motor vehicle safety and tailpipe emissions inspection program in St. Louis. The program, known as enhanced Inspection/Maintenance (I/M), is the first of its kind in the nation. At the present time, approximately 1.2 million vehicles are inspected in this program. In terms of air quality benefits, this new program will reduce ozone producing hydrocarbon emissions by about 14,960 kilograms per day and carbon monoxide by 250,000 Kg/Day. For the St. Louis nonattainment area, this represents a 7 percent reduction in total hydrocarbon emissions. This level of hydrocarbon emissions is about the same as the emissions from two large assembly automobile plants. As a result of this program, the state is now able to get inspection data by computer from inspection stations at any time. The state is also able to send training updates, enforcement information and other messages to any or all stations by computer. This project was a major task that involved writing extensive regulations, writing the computer software program to control information by the state, putting together the computer hardware needed to run the system and training nearly 3000 auto mechanics on how to use their new computerized emissions analyzers. The Air Pollution Control Program was also required to test and certify the computer software programs of four analyzer manufacturers in order for them to be able to sell their equipment to the inspection stations.



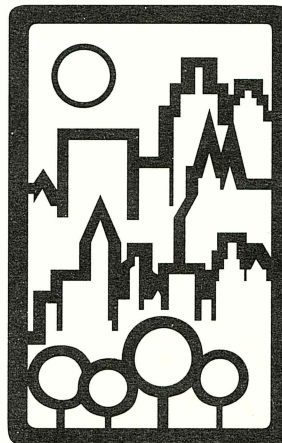
## The Air Conservation Commission

The Missouri Air Conservation Commission, made up of seven members appointed by the governor, was created by an act of the Missouri General Assembly in 1965. Members serve four-year terms. The commission usually meets once per month. All meetings are open to the public and public comments are welcomed. Most commission meetings include public hearings where rule actions, variances from rules and other matters are heard. Notices of the times and locations of public hearings are published on a routine basis in the public notices sections of the following newspapers: News Tribune, Jefferson City; Daily American Republic, Poplar Bluff; The Leader and Press, Springfield; Kansas City Star; and St. Louis Post-Dispatch. Also, anyone who wants to be placed on a mailing list to receive notices of public hearings and commission meetings may do so by contacting the Air Pollution Control Program at (314) 751-4817.

The first duty of the Missouri Air Conservation Commission is to carry out the provisions of the Missouri Air Conservation Law (Chapter 643, Revised Statutes of Missouri). Most often, the commission's activities are directed toward achieving and maintaining the National Ambient (Outdoor) Air Quality Standards. Among the commission's duties are the adoption, amendment and rescission of rules; making decisions on appeals from enforcement orders and permit conditions; beginning legal actions to compel compliance with rules; assigning duties to local air pollution control agencies; the attainment/nonattainment listing of areas of the state regarding the national standards; and the approval of overall plans for meeting the national standards in listed nonattainment areas.

## Local Agencies

The Missouri Air Conservation Commission gives some local air pollution control agencies permission to function as the air pollution control groups in their areas. Nearly half the air pollution control effort of the state is managed by the local agencies and with state carrying out the other half. The staff of each local agency is approximately 50 people. The commission grants permission for local air pollution authority when a local agency demonstrates ability to enforce its own air pollution rules, which must be as complete and at least as strict as state rules. The local agencies also issue permits and maintain their own air monitoring networks. During 1990, there were four local agencies operating in the state, which played a major role in achieving and maintaining clean air in Missouri. All of the local agencies were partially funded by U.S. Environmental Protection Agency grant funds passed through the state air program to the local agencies. Also, the local agencies may control and enforce the laws of the asbestos program in their areas and establish asbestos fees to fund the program.





## ADMINISTRATION SECTION

The Administration Section controls the budget, buys needed supplies and works with personnel. The Air Pollution Control Program gets its funding from three sources: general revenue voted by the General Assembly federal funds in the form of U.S. Environmental Protection Agency grants and fees collected by the Air Pollution Control Program. In 1984, the Inspection/Maintenance program was started in the St. Louis area.

Each of the 1.2 million vehicles are required to have an emission test costing \$4.50, 50 cents of the fee goes to the Air Pollution Control Fund. The money is divided between the Missouri State Highway Patrol and the Department of Natural Resources Air Pollution Control Program. These funds are used to run the Inspection/Maintenance program.

In January 1989, the program began collecting permit filing (\$100) and processing fees (\$150 per hour). These fees are put in the Natural Resources Protection Fund-Permit Fee Subaccount. This money is used to assist the Construction Source Permit Section.

House Bill 77 went into effect in June 1989. This law allows fees to be collected in connection with asbestos removal projects. The receipts are put in the Natural Resources Protection Fund-Asbestos Fee Subaccount and are used to fund the asbestos enforcement activities of the state and local air pollution control agencies.

The table shows the total money received for air pollution control including funds passed through to local air pollution control agencies.

Fiscal Year	Federal	State	Other	Total
1981	\$2,560,000	\$240,337		\$2,800,937
1982	\$1,924,900	\$236,601		\$2,161,501
1983	\$1,924,900	\$227,243		\$2,152,143
1984	\$1,924,900	\$234,167	\$132,274	\$2,291,341
1985	\$1,924,900	\$250,734	\$297,851	\$2,561,985
1986	\$1,927,800	\$336,334	\$297,851	\$2,561,985
1987	\$2,102,322*	\$329,571	\$276,282	\$2,708,175
1988	\$2,127,800*	\$349,651	\$280,438	\$2,757,889
1989	\$2,125,800*	\$461,448	\$282,740	\$2,884,259
1990	\$2,185,800*	\$622,141	\$330,762	\$3,157,305

\* Includes Other Funds



## Directory

**John D. Ashcroft**  
State of Missouri  
*Governor*

**Missouri Air  
Conservation Commission**

**Bill Monday**  
*Chairman*

**John Sanders**  
*Vice Chairman*

**Michael Foresman**

**Kenneth Beck**

**Harriett Beard**

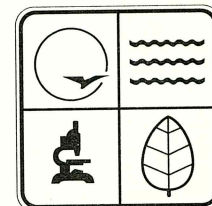
**Johnny Ray Conklin**

**David Crane**

**G. Tracy Mehan III**  
*Director*  
Department of Natural Resources

**David Shorr**  
*Director*  
Division of Environmental Quality

**Roger D. Randolph**  
*Director*  
Air Pollution Control Program





## Air Pollution Control Information

FOR AIR POLLUTION  
CONTROL  
INFORMATION CALL: .....314-751-4817

### In case of an environmental emergency:

Missouri Department of  
Natural Resources

Emergencies Only .....314-634-2436

Emergency  
Response Office .....314-751-7929

National  
Response Center .....1-800-424-8802

U.S. Environmental  
Protection Agency  
Region VII.....913-236-3778

Chemtrec .....1-800-424-9300

